

REMARKS

In the Office Action, claims 3-4, 9-11 and 20-23 are rejected under 35 U.S.C. § 103 as unpatentable in view of U.S. Patent No. 6,147,451 ("Shibata") and U.S. Patent No. 6,720,572 ("Jackson"); claim 5, 14, 35, and 37 are rejected pursuant to 35 U.S.C. § 103 in view of Shibata, Jackson and further in view of U.S. Patent No. 6,900,473 ("Yoshitake"); and claims 6-8, 12-13 and 24-25 are rejected under 35 U.S.C. § 103 in view of Shibata, Jackson and further in view of U.S. Patent No. 5,454,716 ("Yashiki"). Applicants believe that the rejections should be withdrawn at least based on the reasons discussed below.

Of the pending claims at issue, claims 3, 9, 10, 14, 20, and 35 are independent claims each reciting in part that the transparent electrode is connected to the light output surface through a contact metal layer. As further defined in claims 3, 9, 10, and 14, the size of the contact metal layer is less than the size of the light output surface as supported and further illustrated in Applicants' specification in Figure 12 and the corresponding written description, for example, in paragraph 122 of patent application publication No. 2004/0195576.

The Patent Office primarily relies on the Shibata and Jackson references in support of the obviousness rejections. However, Shibata fails to disclose a transparent electrode connected to a light output surface through a contact layer, let alone a contact metal layer as claimed, as admitted by the Patent Office on page 2 of the Office Action.

Further, Applicants do not believe that the Patent Office can rely solely on the Jackson reference to remedy this deficiency. While the Patent Office refers to a contact layer 95 in Jackson, this layer is made from an organic material, namely, pentacene, in contrast to the contact metal layer as claimed, let alone a metal layer formed from a noble metal as further defined in claim 22. Moreover, the alleged pentacene contact layer in Jackson does not provide a connection between a light-emitting layer and a transparent electrode. Therefore, Jackson provides no motivation to use its pentacene layer as a contact layer, let alone a contact metal layer, between the alleged transparent electrode 24 and light-emitting organic layer 23 of Shibata. While the Examiner refers to col. 1, line 27 of Shibata for the alleged disclosure that a contact metal is gold, this disclosure relates to an electrode material, and thus, cannot be equated to the claimed contact metal layer which connects the transparent electrode and light output surface as further claimed. Therefore, even if properly combinable, Applicants do not believe

that the Patent Office can rely solely on the Jackson and Shibata references in support of the obviousness rejections and, moreover, cannot rely on one or any hypothetical combination of the remaining cited art to remedy the deficiency of the same.

Accordingly, Applicants respectfully submit that the obviousness rejections with respect to pending independent claims 3, 9, 10, 14, 20, 35 and dependence thereof should be withdrawn.

Applicants have also added new claim 38 as previously provided. Claim 38 is directed to a light-emitting device. The light-emitting device includes a light-emitting device main body having a light output surface, and a transparent electrode formed in a size larger than a size of the light output surface so as to cover the light output surface, wherein the light-emitting device main body is that is fixed to an insulation resin layer, and wherein a portion thereof protrudes from the insulation layer so as to generate a step between a surface of the insulation resin layer and the light output surface.

Support for claim 38 can be found in Applicants' specification, for example, as illustrated in Figure 2 and the corresponding written description, for example, in paragraph [0085] of Applicants' Patent Application Publication No. 2004/0195576. In this configuration, both the light output surface 5 and the side surfaces 9 are connected to the transparent electrode 4, so that it is possible to secure a large area of contact between the transparent electrode 4 and the light-emitting diode 1. Particularly, as the size of the light-emitting diode 1 becomes a minute size of about several tens of micrometers, the ratio of the area of the side surfaces 9 to the area of the n-type semiconductor layer 6 to be connected to the transparent electrode 4 increases. Therefore, if the connection to the transparent electrode 4 can be secured through the side surfaces 9, the electric resistance in the connection region can be reduced, and the light-emitting diode 1 can be made to be a light-emitting device with enhanced reliability. Moreover, a contact layer formed of a metallic material in an illustrative embodiment can be formed on the side surfaces 9. With such a contact layer, it is possible to enhance the performance of contact between the n-type semiconductor layer 6 and the transparent electrode 4, and the light-emitting diode 1 can be made to be a light-emitting device with a further enhanced reliability. See, Applicants' Patent Application Publication No. 2004/0195576, paragraph [0090].

Even if properly combinable, Applicants do not believe that the cited references, at a minimum, provide the step configuration of the light output surface with respect to the insulation

resin layer as claimed. Therefore, Applicants believe that new claims 38 and 39 should be considered patentable over the cited art for at least these reasons.

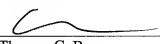
For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing.

Respectfully submitted,

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